

NOTES AND NEWS.

DR. OSCAR UHLWORM has retired from the editorial supervision of the *Bibliotheca Botanica*. His place is to be taken by Dr. Luerssen of Königsberg.

PROF. W. W. BAILEY reports *Houstonia cærulea* in bloom at Providence, R. I., on March 26th, "my earliest date in twenty-six years." "*Forsythia pendula* bloomed here out of doors all winter."

F. A. F. C. WENT, whose interesting studies on vacuoles have been noted (see this journal, xiii. 280) has extended his observation on their origin. Most of his previous studies have related to vegetative cells. He has now investigated the reproductive cells of a large number of algae of various widely separated groups. He finds his previous conclusions confirmed. Vacuoles arise exclusively by the division of previously existing ones.

SINCE the notice of his investigations on the origin of the antherozoids of the Characeæ (ante, p. 87) M. Leon Guignard has extended his studies to the antherozoids of the Hepaticæ, Musci, Filices and Fucaceæ. In recent numbers of *Comptes Rendus* (cviii, 463, 577) he has summarized his results. In the Fucaceæ each antherozoid is simply an ordinary naked, pyriform cell. It is furnished with a nucleus, situated near the "red spot," and with two cilia of unequal length. The body is very large and contains all the protoplasm of the cell. The cilia arise from a ring of protoplasm on the surface of the body which differentiates itself from the rest by becoming hyaline. The nucleus of the antheridium divides by the usual steps into sixty-four daughter nuclei, so that sixty-four antherozoids arise from each antheridium. At the same time the colorless chromatophores multiply to a much greater number. Each nucleus then joins itself to one of the colorless chromatophores. The remainder quickly become yellow or orange. By the time the formation of the antherozoids is complete, however, these have lost their color and been absorbed, while the chromatophore accompanying the nucleus has become the "red spot." In the other plants named above, in all cases the nucleus, and the nucleus alone, forms the body of the antherozoid. The nucleus moves to one side of the mother cell and begins to elongate, the slender anterior end remaining stationary. This elongation continues till two or more spiral coils have been formed. Then a portion of the protoplasm just outside of the nucleus differentiates in the same manner as described above for the formation of cilia. This differentiated portion may be only a band (when the cilia are to be few, as in the Hepaticæ and Musci), or the whole layer, when the cilia are numerous, as in the ferns. The remaining protoplasm is either completely (Hepaticæ) or partially absorbed (Filices). In the latter case a vesicle is formed which encloses minute starch grains and the residue of the protoplasm. The transformation of the nucleus is accompanied by internal modifications which render the spiral body almost homogeneous. It is covered with an extremely delicate hyaline envelope.

DR. SELMAR SCHÖNLAND, of Oxford, has been called to the curatorship of the Albany Museum in Grahamstown, S. Africa.

DR. E. ZACHARIAS has published in the last number of Pringsheim's *Jahrbücher* (xx, heft 2) some observations on the origin and growth of the cell wall of the rhizoids of *Chara*, which are very much in the same line as

the recently published investigations of Kohl¹ on the hairs of Borraginaceæ, Urticaceæ, Cucurbitaceæ, etc., and earlier ones of Krabbe² on bast fibers. The earliest appearance either in the case of a new wall or a thickening layer, is a great number of swarming particles which quickly change into a rodlet structure. This consists of a series of very short rods set side by side, with minute prolongations of the protoplasm between. These rods grow larger and larger and become the solid wall or new layer. All attempts to demonstrate the chemical nature or origin of the first-appearing particles failed. The rodlets give the cellulose reaction. These observations taken in connection with those referred to above make it tolerably certain that there is a form of growth in thickness of the cell wall that is neither apposition nor intussusception, but which consists in the addition bodily of a new structure. And it is quite possible when a new layer is put on in this way that some proteid materials should be included between the older and newer layer. This mode of growth in thickness is quite in contrast with the views heretofore held by Strasburger and others. Strasburger's latest contribution to this subject is just issued and has not yet come under our notice.

WORONIN has recently described a disease of cranberry plants produced by the attack of a new species of *Sclerotinia*, *S. Vaccinii* Wor. The fungus attacks young shoots in spring and makes them yellowish-brown to black, the discoloration gradually extending to the leaves. The conidia are formed in a thick pseudo-parenchymatous swelling which involves the cortex. They are formed by constriction without any transverse wall until after the apical growth of the conidiophore has ceased. Then they are pushed off by a curious device, and carried by the wind or insects to the stigmas of flowers. Here they grow as pollen grains would and fill the cavity of the ovary with hyphæ. From the outer ones branches invade the ovary wall and convert it into a sclerotium. This drops off, withers among the leaves and moss, and as the snow melts in the spring forms fruiting branches. The ascospores are ejected in the same way as in *Claviceps* and the young shoots are infected toward the end of May. The germ tube penetrates the epidermis wall and reaches the fibro-vascular bundle where it develops as before.

IN THE February number of the *Journal of the Royal Microscopical Society* Mr. William West gives a list of Desmids collected by Prof. Tyler, near Amherst, Mass. The list comprises eighty-four species and five varieties or forms. Of these two are new species and four new varieties. The paper is illustrated by two plates.

A WORK on British Uredineæ and Ustilagineæ, by Charles B. Plowright, has been published, and will receive suitable notice in our next number. It is issued at \$2.65 (10s. 6d.), and, after the conservative English method, subscribers (who pay only 8s. 6d.) are required to forward the price before receiving their copy.

MUSCARINE, heretofore considered as belonging exclusively to certain poisonous mushrooms, has been detected in a Japanese food, consisting of rice and fish, as a product of decomposition. A case of food poisoning, in which four persons lost their lives, was investigated by Dr. H. E. Stockbridge (Report of the chemist to the Hokkaido Cho, 1888) and the active agent found to be a ptomaine with the properties of muscarine.

¹ Bot. Centralblatt xxxvii. 1.

² Prings. Jahrb. xviii. 346.